

AMENDMENT UNDER 37 C.F.R. § 1.111
Application Number: 10/516,708
Attorney Docket Number: Q85154

REMARKS

Claims 9-13 and 15-36 are all the claims pending in the application.

The specification has been amended in an effort to further advance prosecution. The geometric symbols have been deleted from the specification.

Entry of the Amendment along with reconsideration and review of the claims on the merits is respectfully requested.

The disclosure is objected to allegedly because the specification contains geometric symbols. The specification has been amended to delete the geometric symbols. Reconsideration and withdrawal are respectfully requested.

Claims 9-13 and 15-36 have been rejected under 35 U.S.C. § 103, as allegedly being unpatentable over U.S. Published Application No. 2006/0071051 to Shoji *et al.* (“Shoji ‘051”) in view of U.S. Patent No. 4,180,415 to Hampl (“Hampl ‘415”).

As an initial matter, Applicants note that the Office Action describes that the rejection is an anticipation rejection under 35 U.S.C. § 102(e). However, Applicants presume that the rejection was intended to be a rejection under 35 U.S.C. § 103. As such, Applicants tailor the following remarks presuming that the rejection is under 35 U.S.C. § 103.

Turning to the merits, Claims 1, 15, 21, and 27 recite that the silver is present in the claimed solder at X weight %, wherein X is equal to or greater than 0.001, but smaller than 0.1.

In contrast, Shoji ‘051 discloses a solder containing “unavoidable impurities.” *See*, paragraph [0013]. Shoji ‘051 discloses that examples of the unavoidable impurities include “non-metallic elements, semi-metallic elements, carbon, oxygen, nitrogen, and transition

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metals.” *See*, paragraph [0034]. Further, Shoji ‘051 discloses that examples of the unavoidable elements that migrate to solder metal include “Pb, Ag, Cu, Fe, Al, As, Cd, etc.” *Id.* Shoji ‘051 is deficient in that it fails to disclose the amount of Ag present therein.

Hampl ‘415 discloses that the electrode materials thereof should be of good purity, generally including less than 0.1 weight-percent of impurities such as silver, aluminum, copper, silicon, boron, magnesium, calcium, chromium, iron, manganese, nickel, lead, or titanium. *See*, col. 4, lines 4-9.

Accordingly, Shoji ‘051 and Hampl ‘415 teach away from adding Ag in an amount of X weight %, wherein X is equal to or greater than 0.001, but smaller than 0.1. Shoji ‘051 directs a person of ordinary skill in the art away from adding Ag into its solder, as Shoji ‘051 teaches that Ag is an unavoidable impurity. By calling Ag an unavoidable impurity, Shoji ‘051 is teaching that it wants to avoid any Ag, if at all possible.

Similarly, Hampl ‘415 teaches that the electrode materials thereof should be of good purity and that silver is an impurity. In this regard, Hampl ‘415 is also teaching away from adding silver, in that it is teaching that silver is an impurity that should be avoided to produce an electrode material of good purity.

Further, Shoji ‘051 and Hampl ‘415 provide silver as a member within a generic list of impurities. Shoji ‘051 at paragraph [0034] fails to provide the motivation to select Ag from the list of unavoidable impurities. Hampl ‘415 at column 4, lines 4-9 also fails to provide the motivation to select Ag from its list of impurities. As such, a person of ordinary skill in the art

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would not have been motivated to select adding silver at X weight %, wherein X is equal to or greater than 0.001, but smaller than 0.1.

Moreover, the claimed solder provides for unexpected results. Figure 11A shows the shearing strength of a solder containing silver and a solder containing no silver. Figure 11A shows that the claimed solder provides for a superior shearing strength. The superior shearing strength is unexpected, as Shoji '051 and Hampl '451 provide that silver was an impurity that was to be avoided. In this regard, a person of ordinary skill in the art would not have expected the properties of the solder to improve by adding silver.

Claims 10-13, 16-20, 22-26, and 28-36 depend directly or indirectly from Claim 1, 15, 21 or 27. As such, Claims 10-13, 16-20, 22-26, and 28-36 are patentable for at least the same reasons as Claims 1, 15, 21, and 27.

Reconsideration and withdrawal are respectfully requested.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

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Respectfully submitted,

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